

What is claimed is:

1. A pharmaceutical composition that dissolves and is absorbed sequentially at a desired site in a mammal, comprising:

a first portion for promoting dissolution of said pharmaceutical composition;

a second portion for promoting absorption of said pharmaceutical composition; and

an active ingredient.

2. The pharmaceutical composition as claimed in claim 1, wherein said active ingredient is a vitamin, mineral, dietary supplement, or a non-systemically distributable drug.

3. The pharmaceutical composition as claimed in claim 1, wherein said second portion for promoting absorption is achieved by a mechanism chosen from the group consisting of reduction in the thickness of the mucus layer, reduction in the viscosity of the mucus layer, changes in the structure of the cell membrane, increases in the hydrophobicity within the cellular membranes, alteration of tight junctions, ion pairing and complexation, enhancement of active transport mechanisms, modification of the cellular efflux mechanisms, and changes in the stability of active ingredients toward enzymes.

4. The pharmaceutical composition as claimed in claim 1, wherein said first portion for promoting dissolution is achieved by a first pH change, and said second portion for promoting absorption is achieved by a second pH change, said first pH change and said second pH change have a time difference of about 30 seconds to about 60 minutes.

5. The pharmaceutical composition as claimed in claim 1, wherein said first portion for promoting dissolution is achieved by a first pH change, and said second portion for promoting absorption is achieved by a second pH change, said first pH change and said second pH change have a time difference of about 3 minutes to about 15 minutes.

6. The pharmaceutical composition as claimed in claim 1, further comprising an organic solvent.

7. The pharmaceutical composition as claimed in claim 1, wherein said first portion for promoting dissolution is achieved by a first pH change, and said second portion for promoting absorption is achieved by a second pH change, said first pH change changes the pH about 1 pH unit, and said second pH change changes the pH about 1 pH unit.

8. The pharmaceutical composition as claimed in claim 7, wherein said active ingredient is selected such

that the pKa of said active ingredient is selected at about the center of the pH of said first pH change and the pH of said second pH change.

9. The pharmaceutical composition as claimed in claim 1, wherein said first pH change and said second pH change are achieved by a pH-adjusting substance, said pH-adjusting substance selected from the group consisting of citric acid, tartaric acid, malic acid, fumaric acid, adipic acid, succinic acid, sodium bicarbonate, sodium carbonate, potassium bicarbonate, potassium carbonate, and magnesium carbonate.

10. The pharmaceutical composition as claimed in claim 1, wherein said first portion for promoting dissolution contains said active ingredient, and said second portion for promoting absorption is contained in a coating.

11. The pharmaceutical composition as claimed in claim 1, wherein said first portion for promoting dissolution contains said active ingredient, said first portion for promoting dissolution and said active ingredient is contained in a coating, and said second portion for promoting absorption is contained in a coating.

12. The pharmaceutical composition of claim 10, wherein said coating is selected from the group consisting of an enteric coating, a coating responsive to pH changes, a coating which is metabolized by enzymes present specifically

in the localized environment of the target site of absorption, a coating which is metabolized by enzymes predominantly in the localized environment of the target site of absorption, a coating which dissolves after a certain period of time, and a coating which dissolves after exposure to a certain volume of liquid.

13. The pharmaceutical composition of claim 11, wherein said coating is selected from the group consisting of an enteric coating, a coating responsive to pH changes, a coating which is metabolized by enzymes present specifically in the localized environment of the target site of absorption, a coating which is metabolized by enzymes predominantly in the localized environment of the target site of absorption, a coating which dissolves after a certain period of time, and a coating which dissolves after exposure to a certain volume of liquid.

14. The pharmaceutical composition as claimed in claim 1, wherein said first portion for promoting dissolution is achieved by containing said first portion in a coating and a matrix.

15. The pharmaceutical composition as claimed in claim 1, wherein said first portion for promoting dissolution is achieved by containing said first portion in a coating and a membrane.

16. The pharmaceutical composition as claimed in claim 1, wherein said first portion for promoting dissolution is achieved by containing said first portion in a membrane and a matrix.

17. The pharmaceutical composition as claimed in claim 1, wherein said second portion for promoting absorption is achieved by containing said first portion in a coating and a matrix.

18. The pharmaceutical composition as claimed in claim 1, wherein said second portion for promoting absorption is achieved by containing said first portion in a coating and a membrane.

19. The pharmaceutical composition as claimed in claim 1, wherein said second portion for promoting absorption is achieved by containing said first portion in a membrane and a matrix.

20. The pharmaceutical composition as claimed in claim 1, wherein said active ingredient is a drug that displays poor pharmacokinetic characteristics.

21. The pharmaceutical composition as claimed in claim 1, wherein said active ingredient has poor bioavailability.

22. The pharmaceutical composition as claimed in claim 1, wherein said active ingredient has a pK_a within the pH range of the desired target body cavity.

23. The pharmaceutical composition as claimed in claim 1, wherein said pharmaceutical composition is administered in a suitable dosage form, said suitable dosage form selected from the group consisting of tablets, granules, pellets, multiparticulates, capsules, minitables, beads, powders, suppositories, gels, solutions, liquid drugs, emulsions, and microemulsions.

24. The pharmaceutical composition as claimed in claim 1, further consisting of a bioadhesive.

25. The pharmaceutical composition as claimed in claim 1, further consisting of a glidant.

26. The pharmaceutical composition as claimed in claim 1, further consisting of a lubricant.

27. The pharmaceutical composition as claimed in claim 1, further consisting of a binder.

28. The pharmaceutical composition as claimed in claim 1, wherein said binder is selected from the group consisting of povidone, acacia, tragacanth, gelatin, starch, methyl cellulose, sodium carboxy methyl cellulose, alginic acid, magnesium aluminum silicate, polyethylene glycol, guar gum, polysaccharide acid, bentonite, sugar, and invert sugar.

29. The pharmaceutical composition as claimed in claim 1, further consisting of an excipient.

30. The pharmaceutical composition as claimed in claim 1, further consisting of a flavoring.